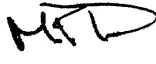




QUICK REFERENCE FOR STATUS OF ENVIRONMENTAL INDICATORS					
Name and EPA I.D. Number	Location (City or Town)	Current CA725 Decision	Current CA750 Decision	If Current Decision is Negative, Projected Date for Positive EI	
				CA725	CA750
Blackman Uhler Chemical Company SCD 003 349 065	Spartanburg, South Carolina		YE		

DATE: July 20, 2004

SUBJ: Evaluation of Blackman Uhler Chemical Company's status under the RCRIS
Corrective Action Environmental Indicator Event Codes (CA725)
EPA I.D. Number: SCD 003 349 065

FROM: Marianna DePratter, P.G. 
RCRA Hydrogeology I
Division of Hydrogeology
Bureau of Land and Waste Management

THRU: Jack Gelting, P.G., Manager 
RCRA Hydrogeology I
Division of Hydrogeology
Bureau of Land and Waste Management

TO: G. Kendall Taylor, P.G., Director 
Division of Hydrogeology
Bureau of Land and Waste Management

Narinder Kumar, Branch Chief
RCRA Program Branch
Waste Management Division
U.S. EPA Region IV

I. PURPOSE OF MEMO

This memo is written to formalize an evaluation of Blackman Uhler Chemical Company's status in relation to the following corrective action event codes defined in the Resource Conservation and Recovery Information System (RCRIS):

1) Migration of Contaminated Groundwater Under Control (CA750),

Concurrence by the Bureau of Land and Waste Management Division of Hydrogeology's Director is required prior to changing this event code into RCRA Info. Your concurrence with the interpretations provided in the following paragraphs and the subsequent recommendations is satisfied by dating and signing at the appropriate location within Attachment 1.

II. HISTORY OF ENVIRONMENTAL INDICATOR EVALUATIONS AT THE FACILITY AND REFERENCE DOCUMENTS

This particular evaluation is the third evaluation for Blackman Uhler Chemical Company. The initial Environmental Indicator Evaluation was completed December 31, 1997. Data generated during Blackman Uhler's Phase I and II RCRA Facility Investigations (dated July 1995 and August 1997, respectively) confirmed the presence of soil and groundwater contamination above health-based concentrations at the site. Because of the potential for human exposure to waste sludge remaining at the surface of several inactive wastewater lagoons (SWMU 9) and in the area of closed lagoons (SWMUs 6, 7, 8), a score of CA 725 NO was assigned during the December 31, 1997 Environmental Indicator Evaluation. In 1997, the ability of the operating groundwater recovery system to halt offsite migration of groundwater contamination was unknown; therefore, groundwater releases at Blackman Uhler were considered to be uncontrolled.

In 1999 Blackman Uhler Chemical Company completed a quantitative, site-specific risk assessment to better evaluate the hazards associated with exposure to chemicals present in buried wastewater treatment sludge and contaminated subsoils at the site. Nine exposure units were identified for surface and/or subsurface soil and these exposure units correspond to SWMUs 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 13, 26 and the Building 8 Area of Concern. Given an industrial exposure scenario, the quantitative, site-specific risk assessment indicated that, except for SWMUs 6, 7, 8, and 9, further investigation and/or remediation was generally not warranted. At all units, the cancer risk was estimated to be within, or below the range of 1×10^{-6} to 1×10^{-4} which is used as the point of departure for making risk management decisions at chemical release sites.

Remedial activities at Blackman Uhler Chemical Company, to date, have focused on removing wastewater treatment sludge and contaminated subsoil from five former wastewater treatment lagoons (SWMUs 2, 3, 4, 10, 13), and one stormwater retention basin (SWMU 14) and consolidating the waste within a Corrective Action Management Unit (CAMU). Blackman Uhler has consolidated excavated remediation wastes into the CAMU constructed over SWMUs 6, 7, and 8, effectively capping these units in place. Because Blackman Uhler has constructed the initial cell of the CAMU over SWMUs 6, 7 and 8, the risk of exposure to a construction worker from subsurface waste and contaminated subsoil at these units is only hypothetical. Furthermore, Blackman Uhler Chemical Company has fenced SWMU 9 and posted signs to prevent human exposure to the sludge exposed at the surface of this inactive unit. There are currently no

completed pathways of exposure at the site to units that would represent a hazard to human health. Therefore, a status code of CA 725 YE, Current Human Exposures Under Control, was assigned during the second EI evaluation conducted March 15, 2004.

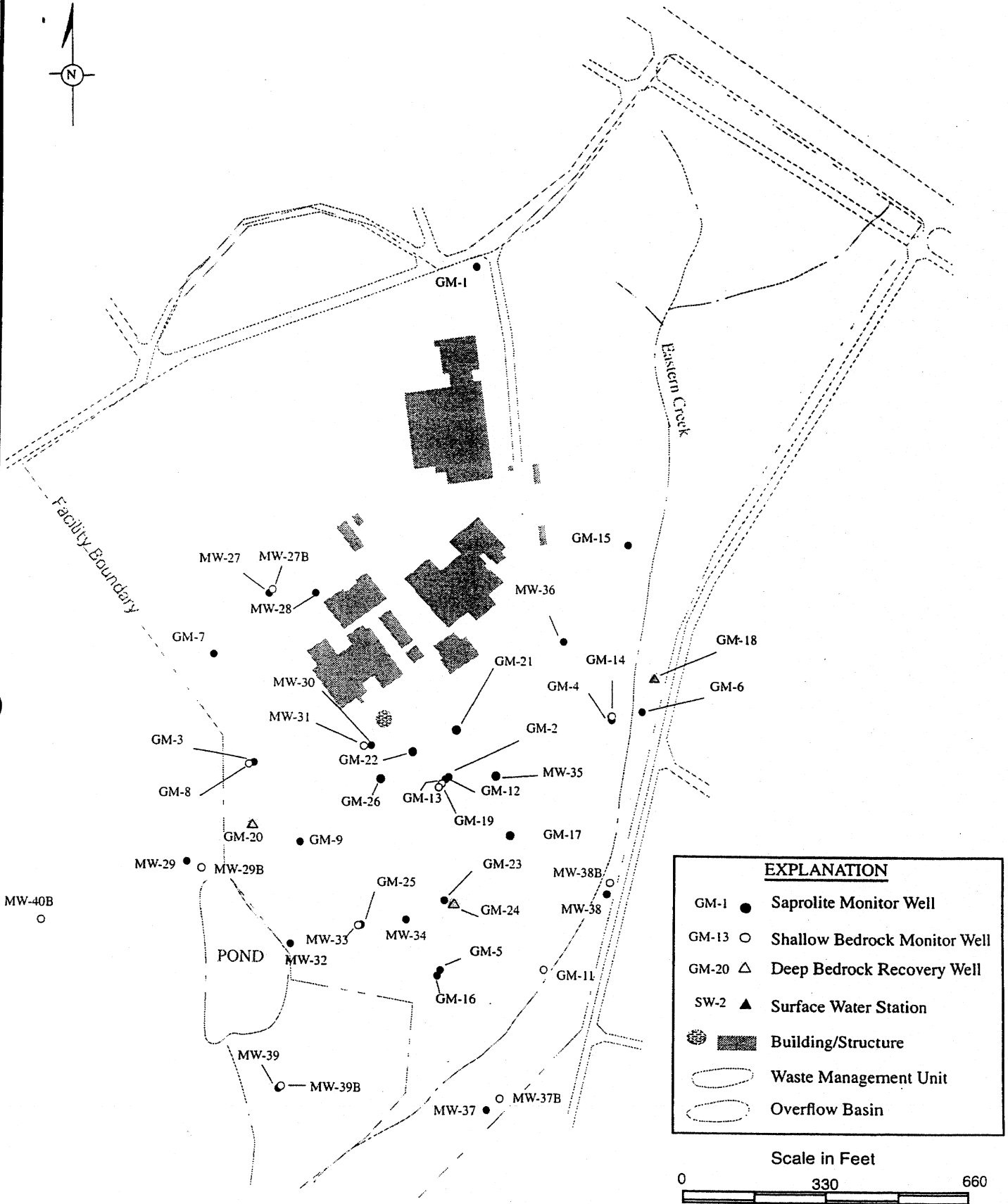
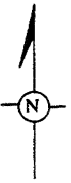
III. FACILITY SUMMARY

Blackman Uhler Chemical Company is located approximately two miles southeast of the city of Spartanburg, South Carolina in Spartanburg County. Blackman Uhler manufactures textile dyestuffs and specialty organic chemicals. There are six major production areas at the facility: the nitration process area; the mixing and presscake process area; the specialty chemical manufacturing area; the pigment inks production area; the disperse dyestuff production; and the dyestuff naphthol production area. Raw materials used for dyestuff production include: naphthol, dye acids and salts, acids, bases, solvents and aromatic compounds.

Blackman Uhler no longer operates a RCRA hazardous waste treatment unit, the Aeration Basin, identified as SWMU 17, at the Spartanburg facility. BUCC certified closure of the waste management unit on November 3, 1987. Hazardous Waste permit SCD 003 349 065 requires BUCC to conduct groundwater corrective action and monitoring during the post-closure period. The highest concentrations of groundwater contamination at BUCC exist downgradient of the Aeration Basin (SWMU 17). The Aeration Basin was an unlined surface impoundment used in the treatment of industrial wastewater from 1972 until closure. Quarterly groundwater monitoring, conducted on a site-wide basis, indicates the predominant groundwater contaminants to be the following semi-volatile organic constituents: 5-chloro-2-methyl benzenamine, o-Toluidine-hydrochloride, p-chloroaniline, p-Chloro-m-cresol, 5-Nitro-toluidine, and chlorobenzene. The dye intermediate, 5-chloro-2-methyl benzenamine is the dominant groundwater contaminant; it is found in the highest concentrations and is the most widespread in both saprolite and bedrock aquifers.

Blackman Uhler Chemical Company has operated three deep bedrock recovery wells (GM-18, GM-20, GM-24) since 1980 to control groundwater contaminant plume migration (Figure 1). Operation of the deep groundwater recovery system has dewatered a significant volume of the saprolite aquifer and has induced leakage, thereby accelerating the transport of contaminants downward into the underlying bedrock aquifer. Contamination within the saprolite and bedrock aquifers extends to both eastern and western property boundaries. Furthermore, contamination within the saprolite and bedrock aquifers was documented beyond the western boundary during the Phase II RCRA Facility Investigation. The increasing trend of 5-chloro-2-methyl benzenamine detected along the eastern property boundary at shallow bedrock well GM-14 (Figure 2) prompted an "uncontrolled status" for the migration of contaminated groundwater during the initial EI Evaluation in 1997.

In order to prevent future releases to groundwater, and in order to terminate current contaminant releases to groundwater, Blackman Uhler Chemical Company has conducted a



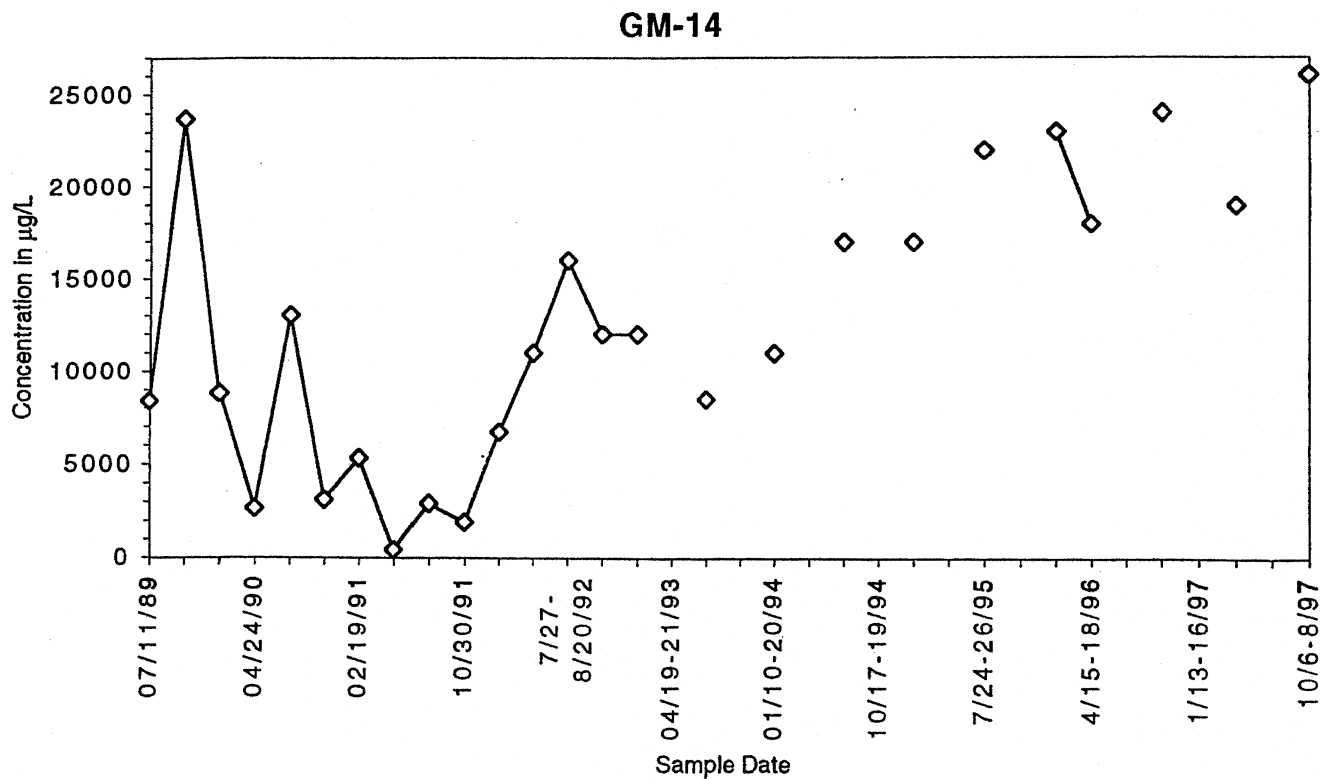
Site Plan

Blackman Uhler Chemical Company
Spartanburg, South Carolina

Kubal-Furr & Associates
Environmental Consultants

Figure 1

Annual Groundwater Monitoring Report, July-December 2003, dated
February 2004



5-chloro-2-methyl-Benzenamine

Semiannual Groundwater Monitoring Report, July - December
1997, dated January 1998

Figure 2

substantial amount of corrective action remedial work since 2000. Remedial activities completed by Blackman Uhler include:

1. Approximately 2,423 cubic yards of wastewater treatment sludge and contaminated subsoil was removed from SWMUs 2,3, and 4 in June 2000.
2. Approximately 225 cubic yards of wastewater treatment sludge and contaminated subsoil was removed from SWMU 10 in November 2000.
3. An impervious cap was constructed over the SWMUs 10, 25 and 26 locations in October 2000.
4. Leakage through the primary liner underlying the aeration basin (which is now used in the treatment of nonhazardous industrial wastewater) was discovered during an April 12, 2001 inspection. The aeration basin was subsequently drained and repairs completed to the primary liner in September 2001.
5. Approximately 3,500 cubic yards of wastewater treatment sludge and contaminated subsoil was removed from SWMU 14 in June 2002.
6. Blackman Uhler upgraded the industrial wastewater sewer system with the construction of two new equalization tanks, abandonment of the original sewer lines (SWMU 24), and installation of a new industrial wastewater sewer system in the Summer and Fall of 2002. Closed circuit videography, submitted to the Department on February 5, 2001, revealed several areas of collapse and/or misalignment, of Blackman Uhler's original industrial wastewater sewer system. All of the SWMU 24 process sewer line segments and twenty-two manholes were abandoned in place by grouting. Approximately twenty-five cubic yards of grout were tremied into the various line segments and manholes.
7. Approximately 10 cubic yards of contaminated subsoil with minor inclusions of "stained soil and wastewater treatment sludge" was removed from SWMU 13 in October 2002.
8. The initial cell of a Corrective Action Management Unit (CAMU) was completed in March 2003. Wastewater treatment sludge and contaminated subsoil excavated from SWMU's 2,3,4,10,13, and 14 was consolidated at the location of SWMUs 6,7,8 and capped with two feet of compacted clay, overlain by a high density polyethylene liner. A drainage layer and vegetated cover was placed on top of the high density polyethylene liner. By constructing the CAMU at the location of SWMUs 6,7, and 8, Blackman Uhler has effectively capped SWMUs 6,7 and 8 in place, thereby preventing future rainwater infiltration and leaching from these units.
9. In late Summer and Fall 2003, Blackman Uhler installed sub-basin monitoring wells, drilled at forty-five degrees, below the pH Neutralization Basin (SWMU 15), the Primary

Clarifier (SWMU 16), the Secondary Clarifier (SWMU 18), and the Sludge Thickener (SWMU 19) in order to detect future leakage from these in-ground wastewater treatment units. Three water table wells were also installed in order to detect the presence of non-aqueous phase liquids adjacent to the Aeration Basin (SWMU 17). Neither light non-aqueous phase, nor dense non-aqueous phase liquids were detected.

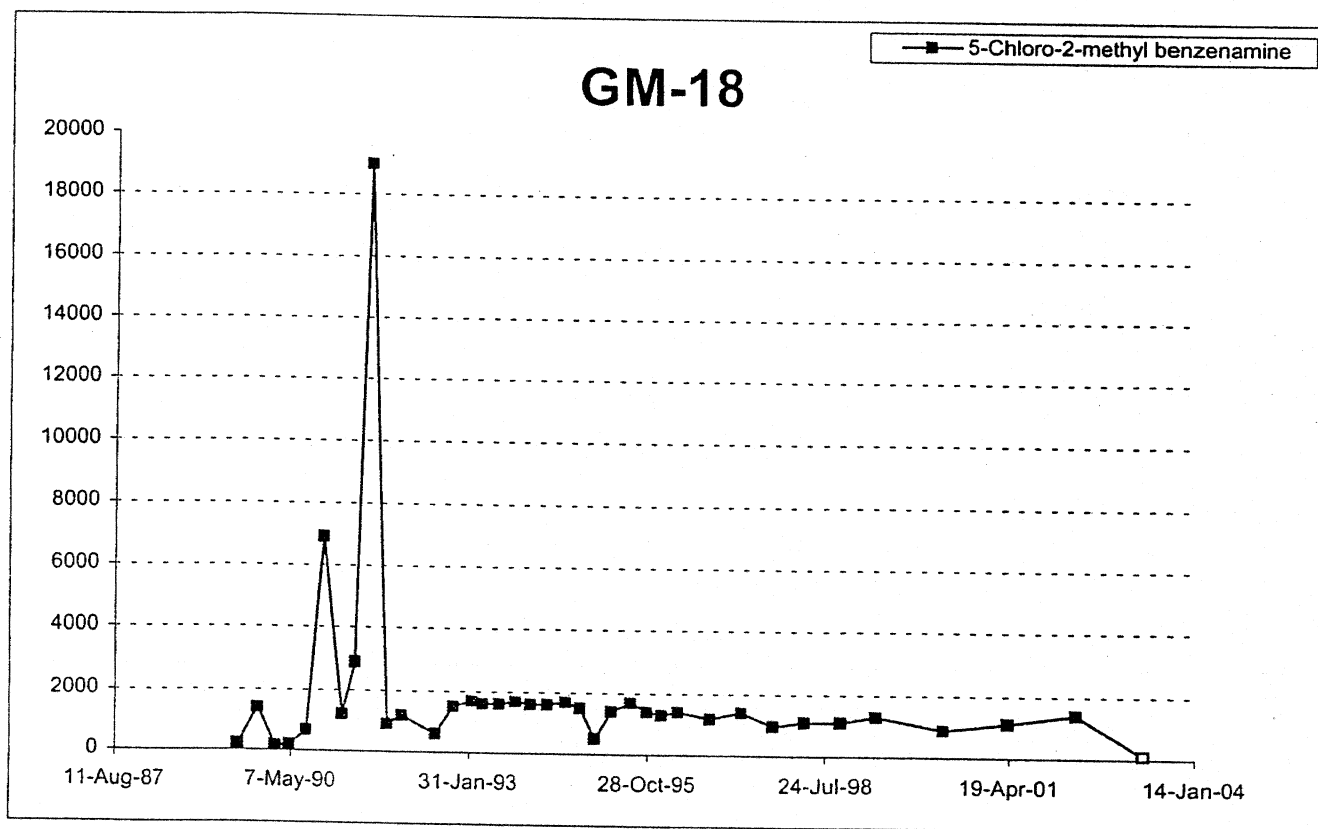
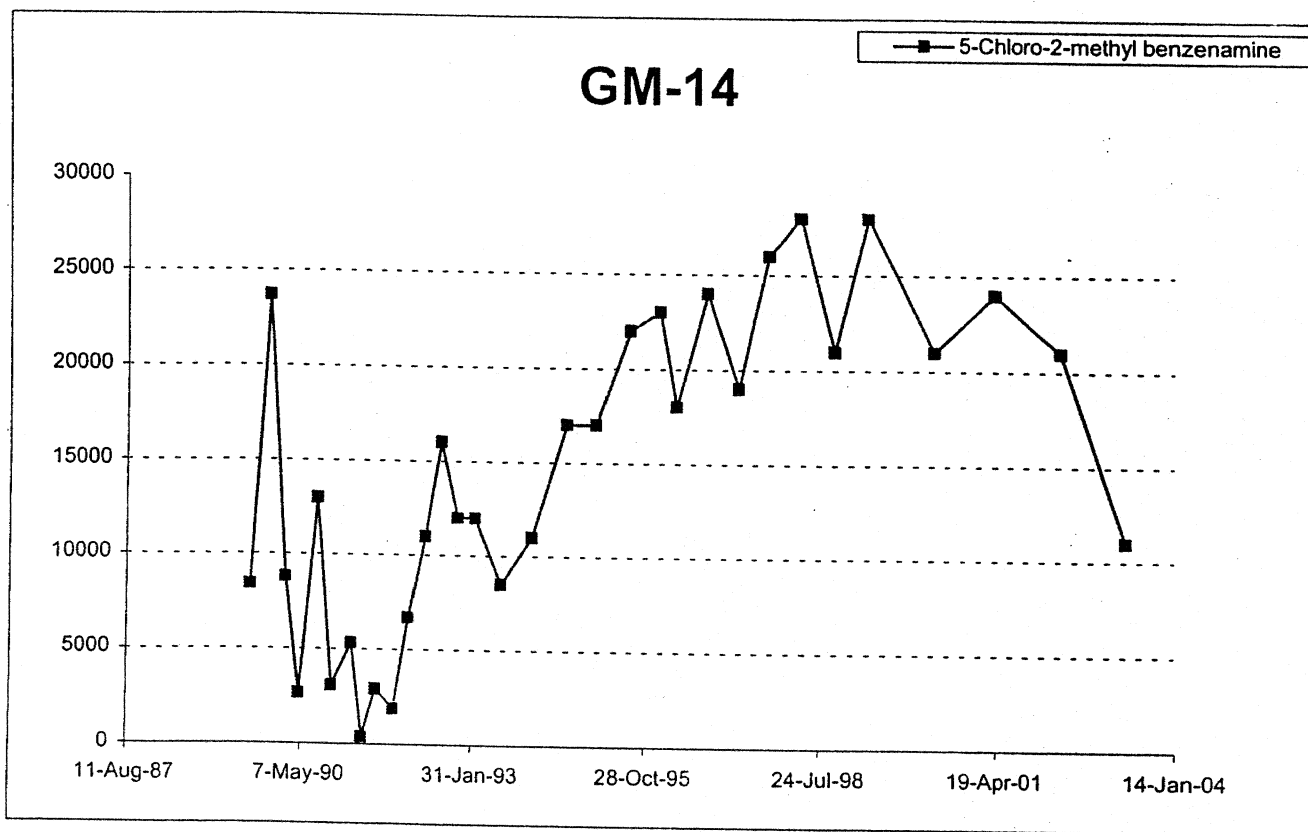
10. On February 5, 2003, SCDHEC and personnel from the US EPA Region IV Science and Exosystem Support Division sampled surface water and groundwater from bedrock wells located at the Creek Golf Course. The Creek Golf Course adjoins Blackman Uhler's western property boundary. No groundwater contaminants characteristic of Blackman Uhler Chemical Company's industrial processes were detected within samples collected from the Creek Golf Course wells.

IV. CONCLUSION FOR CA750

Groundwater quality near the eastern property boundary has improved in response to the remedial activities that Blackman Uhler has completed in recent years. The concentration of 5-chloro-2-methyl benzenamine has decreased in recovery well GM-18, and in the shallow bedrock well (GM-14) associated with recovery well GM-18 (Figure 3). Although groundwater quality appears to be improving near the source area (i.e. Aeration Basin and wastewater treatment area), increasing groundwater contaminant trends are observed at the leading edge of the contaminant plume (Figures 4 and 5). However, groundwater quality at the leading edge of the groundwater contaminant plume is also expected to improve over time, as the cleaner groundwater migrates downgradient from the source area. Blackman Uhler is currently modeling groundwater flow and groundwater/surface water interactions. The completed model will be submitted in the fall of 2004. The model results may help to optimize the existing groundwater recovery system to achieve better capture. Based on current contaminant concentration trends, however, and the analytical results from groundwater sampling at the Creek Golf Course, migration of contaminated groundwater is considered controlled.

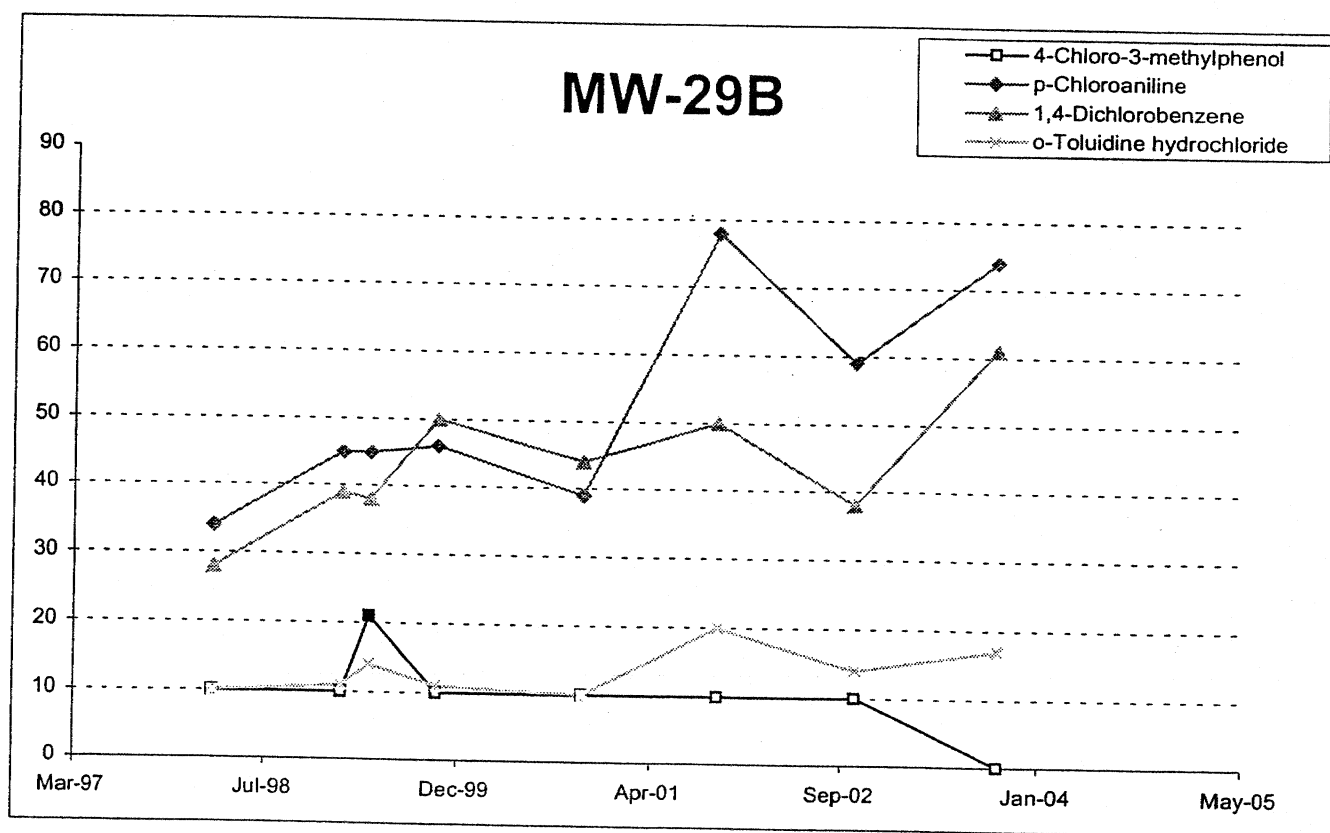
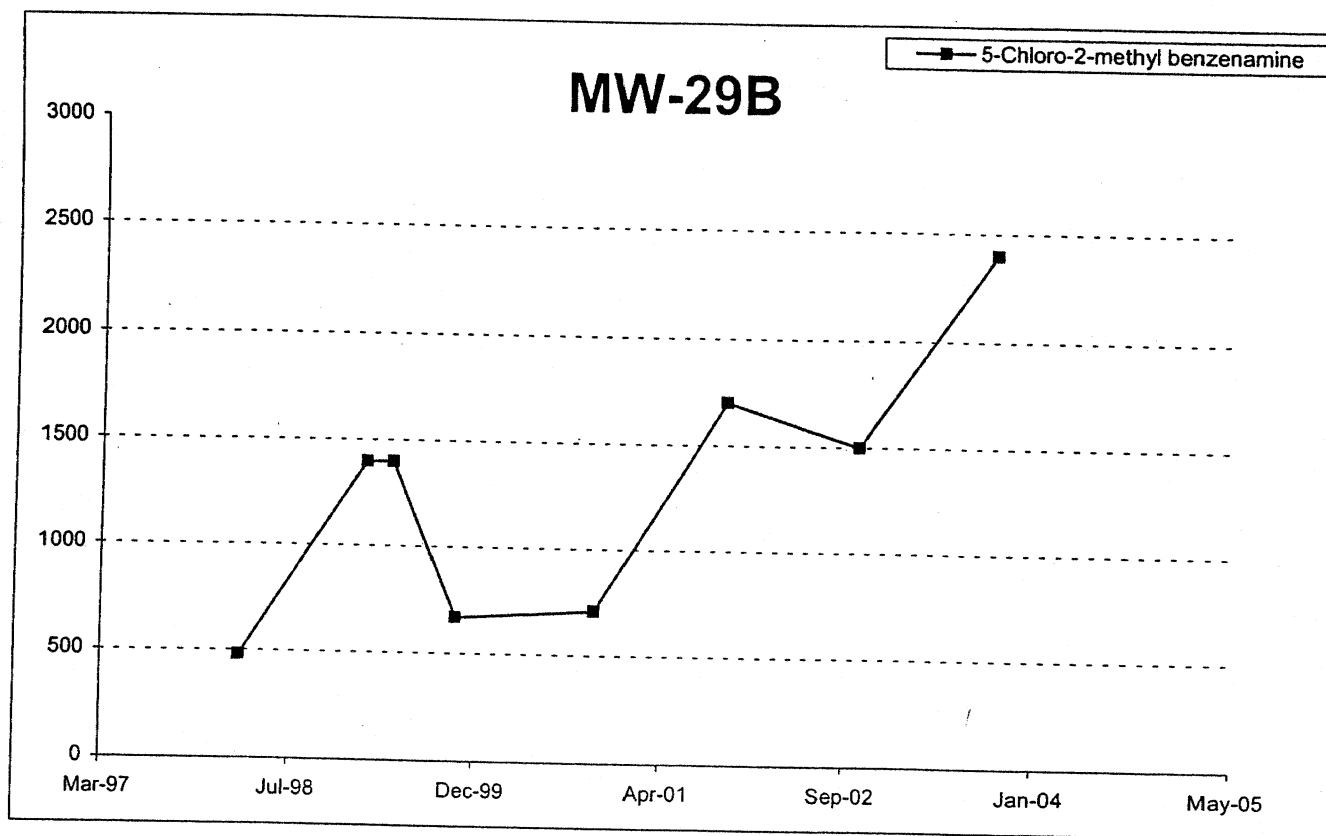
V. SUMMARY OF FOLLOW-UP ACTIONS

Although the quantitative, site-specific risk assessment for BUCC suggests further investigation/remediation to be unnecessary at all but SWMUs 6, 7, 8, and 9, groundwater at the site contains significant concentrations of contaminants. A primary source for these groundwater contaminants are residual wastes buried in former wastewater treatment basins across the site. Therefore, Blackman Uhler has excavated waste sludge and contaminated subsoils from SWMUs 2, 3, 4, 10 and 13. A partial removal was conducted at SWMU 14. Blackman Uhler proposes to excavate waste sludge and contaminated subsoils remaining at SWMUs 14, and 9 and to consolidate the remediation wastes into a second cell to be constructed at the CAMU. Blackman Uhler is also proposing to construct impervious caps at SWMUs 1, 5, and the Building 8 Area of Concern. The public will have an opportunity to review all proposed remedies at the Blackman



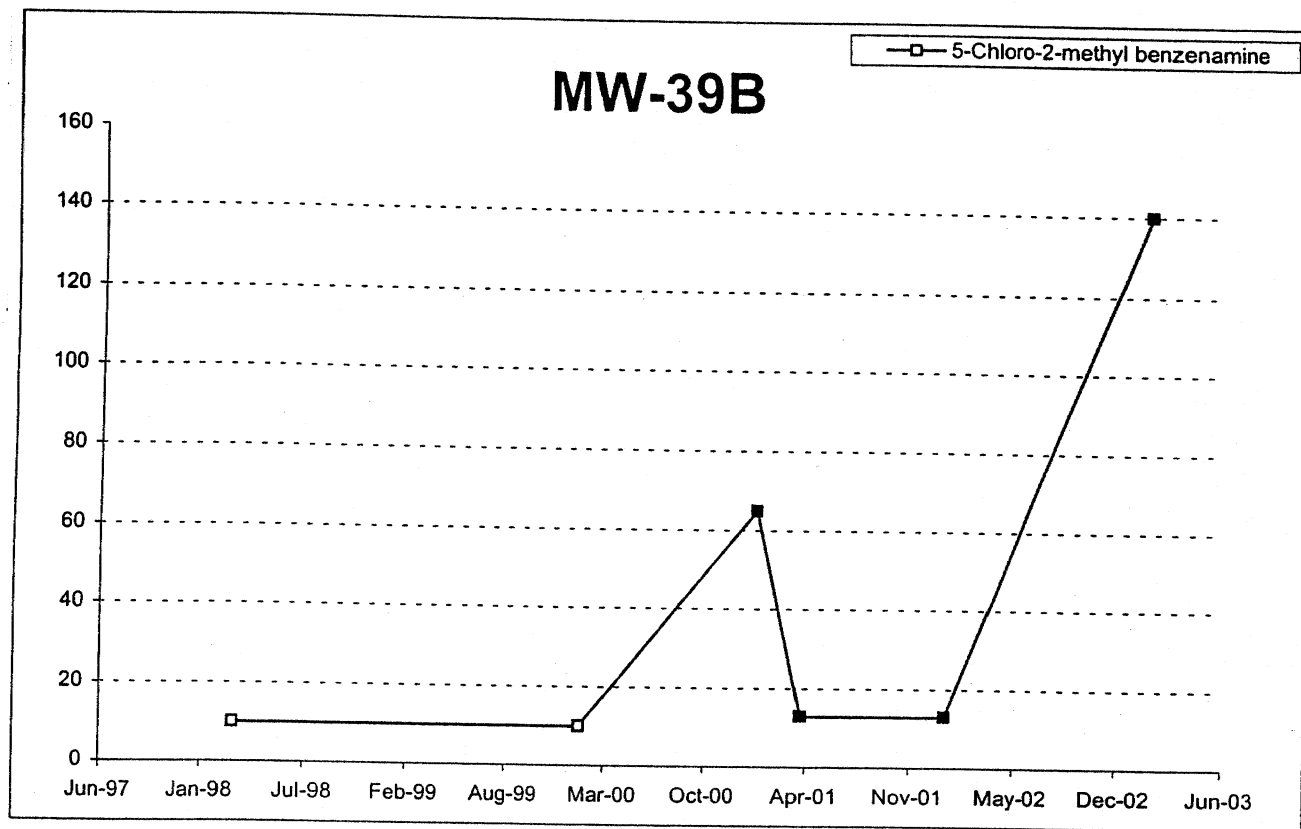
Annual Groundwater Monitoring Report, July - December 2003, dated February 2004

Figure 3



Annual Groundwater Monitoring Report, July - December 2003,
dated February 2004

Figure 4



Annual Groundwater Monitoring Report, July - December 2003,
dated February 2004

Figure 5

Uhler Chemical Company site during the public comment period provided by the permit modification process. Subsequent to the public comment period, Hazardous Waste Permit SCD 003 349 065 will be modified to incorporate approved remedies.

cc: Penny Shepard, Operations Engineering Section, BLWM
Cindy Mason-Carter, Hazardous Waste Consultant, Appalachia III EQC Office

ATTACHMENT 1
DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
RCRA Corrective Action
Environmental Indicator (EI) RCRIS Event Code (CA750)
Migration of Contaminated Groundwater Under Control

Facility Name: Blackman Uhler Chemical Company

Facility Address: 2155 West Croft Circle

Facility EPA ID #: SCD 003 349 065

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

 X If yes - check here and continue with #2 below,

 If no - re-evaluate existing data, or

 If data are not available, skip to #8 and enter AIN≡ (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive Migration of Contaminated Groundwater Under Control EI determination (AYE status code) indicates that the migration of contaminated groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original area of contaminated groundwater (for all groundwater contamination subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The Migration of Contaminated Groundwater Under Control EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

**RCRA Corrective Action
Environmental Indicator (EI) RCRIS Event Code (CA750)**

2. Is **groundwater** known or reasonably suspected to be **contaminated**¹ above appropriately protective levels (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

 X If yes - continue after identifying key contaminants, citing appropriate levels, and referencing supporting documentation.

 If no - skip to #8 and enter YE status code, after citing appropriate levels, and referencing supporting documentation to demonstrate that groundwater is not contaminated.

 If unknown - skip to #8 and enter IN status code.

Rationale:

Groundwater at the Blackman Uhler Chemical Company site is contaminated with: o-xylene, m/p-xylene, ethylbenzene, benzene, toluene, chlorobenzene, 5-chloro-2-benzenamine, o-toluidine hydrochloride, p-chloroaniline, p-chloro-m-cresol, 1,4-dichlorobenzene, 5-nitro-o-toluidine, trichloroethene, o-toluidine, tetrachloroethene, 2,4-dichlorophenol, and aniline.

Contaminant concentrations of o-xylene, m/p-xylene, ethylbenzene, benzene, toluene, chlorobenzene, 1,4-dichlorobenzene, trichloroethene, and tetrachloroethene exceed maximum contaminant levels as established in the US EPA Drinking Water Regulations and Health Advisories dated May 26, 2004.

Contaminant concentrations of p-chloroaniline, 2,4-dichlorophenol, and aniline exceed US EPA Region III Tap Water Risk Based Concentrations dated April 2004.

Contaminant concentrations of 5-chloro-2-methyl benzenamine, o-toluidine hydrochloride, p-chloro-m-cresol, 5-nitro-o-toluidine, and o-toluidine exceed practical quantitative limits (PQLs) as defined in R.61-79.264 Appendix IX.

Reference(s):

Semiannual Monitoring Report, January – June 2003, dated July 2003
Annual Monitoring Report, July – December 2003, dated February 2004

¹ Contamination and contaminated describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate levels (appropriate for the protection of the groundwater resource and its beneficial uses).

**RCRA Corrective Action
Environmental Indicator (EI) RCRIS Event Code (CA750)**

3. Has the **migration** of contaminated groundwater **stabilized** such that contaminated groundwater is expected to remain within an existing area of contaminated groundwater⁷ as defined by the monitoring locations designated at the time of this determination?

 X If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the existing area of groundwater contamination⁷.

 If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the existing area of groundwater contamination²) - skip to #8 and enter NO status code, after providing an explanation.

 If unknown - skip to #8 and enter IN status code.

Rationale:

Groundwater quality near the eastern property boundary has improved in response to the remedial activities that Blackman Uhler has completed in recent years. The concentration of 5-chloro-2-methyl benzenamine has decreased in recovery well GM-18, and in shallow bedrock well (GM-14) associated with GM-18. Although groundwater quality appears to be improving near the source area (i.e. Aeration Basin and wastewater treatment area), increasing groundwater contaminant trends are observed at the leading edge of the contaminant plume. However, groundwater quality at the leading edge of the plume is also expected to improve over time, as the cleaner groundwater migrates downgradient from the source area. The groundwater contaminant plume at Blackman Uhler is bounded to the north by saprolite/bedrock monitoring wells MW-36/ MW-27B; to the east by saprolite/bedrock monitoring wells GM-6, MW-38/MW-38B; to the south by saprolite monitoring wells GM-5, GM-11, GM-16, MW-37, and bedrock monitoring well MW-37B; and to the west by saprolite monitoring wells GM-7, MW-39, and bedrock monitoring wells MW-39B and MW-40B. Future groundwater quality data from these perimeter wells will be evaluated to verify the existence of a stable groundwater contaminant plume.

² An existing area of contaminated groundwater is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of contamination that can and will be sampled/tested in the future to physically verify that all contaminated groundwater remains within this area, and that the further migration of contaminated groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

**RCRA Corrective Action
Environmental Indicator (EI) RCRIS Event Code (CA750)**

Reference(s):

Semiannual Monitoring Report, January – June 2003, dated July 2003

Annual Monitoring Report, July – December 2003, dated February 2004

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Environmental Indicator (EI) RCRIS Event Code (CA750)**

4. Does contaminated groundwater **discharge** into **surface water** bodies?

 X If yes - continue after identifying potentially affected surface water bodies.

 If no - skip to #7 (and enter a YE status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater contamination does not enter surface water bodies.

 If unknown - skip to #8 and enter IN status code.

Rationale:

The Blackman Uhler property drains into two tributaries that bound the property on the southeastern (i.e. Eastern Creek) and the southwestern (unnamed tributary) sides. These two tributaries converge offsite and flow approximately 1.3 miles southwestward before discharging to Kelsey Creek. Kelsey Creek, in turn, flows into Lake Craig, a recreational lake located approximately three miles southeast of the Blackman Uhler site at Camp Croft State Park. There are no direct discharges of wastes or wastewater from Blackman Uhler to either of the tributaries bounding the site. Indirect discharges may occur, however, through the discharge of contaminated groundwater to surface water, or through surface water run off from the process area of the site, during high intensity rainfall events.

Very little analytical data is available regarding surface water quality at Blackman Uhler Chemical Company. Five sediment and three surface water samples were collected from the Eastern Creek during implementation of Blackman Uhler's Corrective Measures Study in 1998. No site-related contaminants were detected within the three surface water samples. On February 5, 2003, one surface water sample was collected from a "pit" formed at the confluence of Eastern Creek and the unnamed tributary forming the southwestern boundary of the site. The Creek Golf Course, which adjoins Blackman Uhler Chemical Company to the west, pumps a portion of the water in the "pit" to an irrigation retention pond. The site-related contaminant, 5-chloro-2-methyl-benzenamine, was detected at an estimated value of 0.21 ug/l in the surface water sample from the "pit". A second surface water sample collected at the irrigation retention pond at the Creek Golf Course was clean.

Reference(s):

Corrective Measures Study Report, Blackman Uhler Chemical Company, Spartanburg, South Carolina, dated March 2000.

Case Development Investigation Evaluation (CDIE) Report, Blackman Uhler Chemical Company, Spartanburg, South Carolina, 29304, SESD Project No. 03-0296, dated March 24, 2003.

**RCRA Corrective Action
Environmental Indicator (EI) RCRIS Event Code (CA750)**

5. Is the **discharge** of contaminated groundwater into surface water likely to be **insignificant** (i.e., the maximum concentration of each contaminant discharging into surface water is less than 10 times their appropriate groundwater level, and there are no other conditions (e.g., the nature and number of discharging contaminants, or environmental setting) which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

 X If yes - skip to #7 (and enter YE status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration of key contaminants discharged above their groundwater level, the value of the appropriate level(s), and if there is evidence that the concentrations are increasing; and 2) providing a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

 If no - (the discharge of contaminated groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration of each contaminant discharged above its groundwater level, the value of the appropriate level(s), and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations³ greater than 100 times their appropriate groundwater levels, providing the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identifying if there is evidence that the amount of discharging contaminants is increasing.

 If unknown - enter IN status code in #8.

Rationale:

The concentration of 5-chloro-2-methyl benzenamine detected within a surface water sample collected at the confluence of Eastern Creek and the unnamed tributary that forms the western boundary of the site is only an estimated value, below the method's practical quantitation limit as defined in R.61-79.264 Appendix IX. Blackman Uhler is currently modeling groundwater flow and groundwater/surface water interaction at the site. In evaluating groundwater discharge to surface water, additional surface water samples will be collected from Eastern Creek and from the unnamed tributary that forms the western boundary of the site. The modeling report will be submitted during the fall of 2004. Blackman Uhler Chemical Company's

³ As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

**RCRA Corrective Action
Environmental Indicator (EI) RCRIS Event Code (CA750)**

status with regard to the "Migration of Contaminated Groundwater Under Control EI" will be reevaluated if data submitted within the modeling report indicate that reevaluation is necessary.

Reference(s):

Phase III RFI Work Plan and Response to DHEC Comments on Groundwater Monitoring Reports and Recovery System Operation, Blackman Uhler Chemical Company, Spartanburg, South Carolina, dated February 2001.

RCRA Corrective Action
Environmental Indicator (EI) RCRIS Event Code (CA750)

6. Can the **discharge** of contaminated groundwater into surface water be shown to be **currently acceptable** (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented⁴)?

 X If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR
2) providing or referencing an interim-assessment,⁵ appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment levels, as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

 If no - (the discharge of contaminated groundwater can not be shown to be **currently acceptable**) - skip to #8 and enter NO status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

⁴ Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

⁵ The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

**RCRA Corrective Action
Environmental Indicator (EI) RCRIS Event Code (CA750)**

_____ If unknown - skip to 8 and enter IN status code.

Rationale and Reference(s):

See rationale and references identified under Question 5.

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the existing area of contaminated groundwater?

 X If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the existing area of groundwater contamination.

_____ If no - enter NO status code in #8.

_____ If unknown - enter IN status code in #8.

Rationale and References:

See rationale and references identified under Questions 3 and 5.

RCRA Corrective Action
Environmental Indicator (EI) RCRIS Event Code (CA750)

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

 X YE - Yes, Migration of Contaminated Groundwater Under Control has been verified. Based on a review of the information contained in this EI determination, it has been determined that the Migration of Contaminated Groundwater is Under Control at the Blackman Uhler Chemical Company site, SCD 003 349 065, located in Spartanburg, South Carolina. Specifically, this determination indicates that the migration of contaminated groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the existing area of contaminated groundwater. This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

 NO - Unacceptable migration of contaminated groundwater is observed or expected.

 IN - More information is needed to make a determination.

Completed by (signature) *Marianna DePratter* Date *8/25/04*
(print) *Marianna DePratter*
(title) *Hydrogeologist III*

Supervisor (signature) *G. Kendall Taylor* Date *8/25/04*
(print) *G. KENDALL TAYLOR*
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Locations where References may be found:

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